IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application. No.	:	10/815,285
Applicant	:	Ezra Jacques Elie Eric Setton
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Commissioner for Patents
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APPEAL BRIEF

Dear Sir:

Applicant submits, the following Appeal Brief pursuant to 37 C.F.R. § 41.37 for consideration by the Board of Patent Appeals and Interferences. Please charge any additional fees or credit any overpayment to our deposit Account No. 02-2666. A duplicate copy of the Fee Transmittal is enclosed for this purpose.

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I. REAL PARTY IN INTEREST

The real party in interest is the assignee, Sony Corporation.

II. RELATED APPEALS AND INTERFERENCES

There are no related appeals or interferences known to the appellants, the appellants' legal representative, or assignee, which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

III. STATUS OF CLAIMS

Claims 1-40 of the present application are pending. The Applicant hereby appeals the rejection of claims 1-40.

IV. STATUS OF AMENDMENTS

On April 28, 2008, Applicant filed a response to an Office Action dated February 1, 2008. The Examiner issued a Final Office Action on July 10, 2008. On October 1, 2008, the Applicant filed a Notice of Appeal in response to the Final Office Action. No amendments have been filed subsequent to the final rejection.

V. SUMMARY OF CLAIMED SUBJECT MATTER

1. Independent claims 1, 10, 12, 21, 23, 32, 34, and 39:

Independent claim 1 recites: An apparatus comprising: a receiver (Fig. 8, receiver 822_k) to receive a default stream and N restart sub-streams (paragraph [055]; lines 4-6) from a transmitter over a transmission path (paragraph [019]; lines 2-3), N being an integer equal to at least 1 and selected according to a selection (paragraph [019]; lines 3-4; paragraph [054], lines 10-11), the default stream being coded by a multiple description (MD) coding (paragraph [054]; lines 3-4; paragraph [054], lines 5-7), the N restart sub-streams being coded by a predictive coding and sampled according to a sampling pattern (paragraph [054]; lines 7-10), the default and N restart sub-streams corresponding to a media content, at least one of the N restart sub-streams restarting the media content when there is a restart condition (paragraph [040]; lines 1-3); and a selector (Fig. 8, selector

824_k) coupled to the receiver to select a receiving frame from the default stream and one of the N restart sub-streams according to a loss status in the default stream (paragraph [057]; lines 1-3).

Independent claim 10 recites: An apparatus comprising: a transmitter (Figure 1, transmitter 120) to transmit a default stream and N restart sub-streams to a plurality of receivers over a plurality of transmission paths (Figure 1, transmission paths/channels 130; paragraph [024], lines 1-6), N being an integer equal to at least 1 and selected according to a selection at the receivers, the default stream being coded by a multiple description (MD) coding (paragraph [027], lines 5-6), the N restart sub-streams being coded by a predictive coding and sampled according to a sampling pattern (paragraph [027], lines 10-11), the default and N restart sub-streams corresponding to a media content, at least one of the N restart sub-streams restarting the media content when there is a restart condition (Figure 4, restart stream 420; paragraph [040], lines 1-3).

Independent claim 12 recites: A method comprising: receiving (Fig. 8, receiver 822_k) a default stream and N restart sub-streams (paragraph [055]; lines 4-6) from a transmitter over a transmission path (paragraph [019]; lines 2-3), N being an integer equal to at least 1 and selected according to a selection (paragraph [019]; lines 3-4; paragraph [054], lines 10-11), the default stream being coded by a multiple description (MD) coding (paragraph [054]; lines 3-4; paragraph [054], lines 5-7), the N restart sub-streams being coded by a predictive coding and sampled according to a sampling pattern (paragraph [054]; lines 7-10), the default and N restart sub-streams corresponding to a media content, at least one of the N restart sub-streams restarting the media content when there is a restart condition (paragraph [040]; lines 1-3); and selecting (Fig. 8, selector 824_k) a receiving frame from the default stream and one of the N restart sub-streams according to a loss status in the default stream (paragraph [057]; lines 1-3).

Independent claim 21 recites: A method comprising: transmitting (Figure 1, transmitter 120) a default stream and N restart sub-streams to a plurality of receivers over a plurality of transmission paths (Figure 1, transmission paths/channels 130; paragraph [024], lines 1-6), N being an integer equal to at least 1 and selected according to a selection at the receivers, the default stream being coded by a multiple description (MD) coding (paragraph [027], lines 5-6), the N restart sub-streams being coded by a predictive coding

and sampled according to a sampling pattern (paragraph [027], lines 10-11), the default and N restart sub-streams corresponding to a media content, at least one of the N restart sub-streams restarting the media content when there is a restart condition (Figure 4, restart stream 420; paragraph [040], lines 1-3).

Independent claim 23 recites: An article of manufacture (paragraph [074], lines 27-28) comprising: a machine-accessible storage medium (paragraph [074], lines 15-16) including data that, when accessed by a machine, causes the machine to perform operations (paragraph [074], lines 28-32) comprising: receiving (Fig. 8, receiver 822_k) a default stream and N restart sub-streams (paragraph [055]; lines 4-6) from a transmitter over a transmission path (paragraph [019]; lines 2-3), N being an integer equal to at least 1 and selected according to a selection (paragraph [019]; lines 3-4; paragraph [054], lines 10-11), the default stream being coded by a multiple description (MD) coding (paragraph [054]; lines 3-4; paragraph [054], lines 5-7), the N restart sub-streams being coded by a predictive coding and sampled according to a sampling pattern (paragraph [054]; lines 7-10), the default and N restart sub-streams corresponding to a media content, at least one of the N restart sub-streams restarting the media content when there is a restart condition (paragraph [040]; lines 1-3); and selecting (Fig. 8, selector 824_k) a receiving frame from the default stream and one of the N restart sub-streams according to a loss status in the default stream (paragraph [057]; lines 1-3).

Independent claim 32 recites: An article of manufacture (paragraph [074], lines 27-28) comprising: a machine-accessible storage medium (paragraph [074], lines 15-16) including data that, when accessed by a machine, causes the machine to perform operations (paragraph [074], lines 28-32) comprising: transmitting (Figure 1, transmitter 120) a default stream and N restart sub-streams to a plurality of receivers over a plurality of transmission paths (Figure 1, transmission paths/channels 130; paragraph [024], lines 1-6), N being an integer equal to at least 1 and selected according to a selection at the receivers, the default stream being coded by a multiple description (MD) coding (paragraph [027], lines 5-6), the N restart sub-streams being coded by a predictive coding and sampled according to a sampling pattern (paragraph [027], lines 10-11), the default and N restart sub-streams corresponding to a media content, at least one of the N restart sub-streams restarting the media content when there is a restart condition (Figure 4, restart stream 420; paragraph [040], lines 1-3).

Independent claim 34 recites: An apparatus comprising: means for receiving (Fig. 8, receiver 822_k) a default stream and N restart sub-streams (paragraph [055]; lines 4-6) from a transmitter over a transmission path (paragraph [019]; lines 2-3), N being an integer equal to at least 1 and selected according to a selection (paragraph [019]; lines 3-4; paragraph [054], lines 10-11), the default stream being coded by a multiple description (MD) coding (paragraph [054]; lines 3-4; paragraph [054], lines 5-7), the N restart sub-streams being coded by a predictive coding and sampled according to a sampling pattern (paragraph [054]; lines 7-10), the default and N restart sub-streams corresponding to a media content, at least one of the N restart sub-streams restarting the media content when there is a restart condition (paragraph [040]; lines 1-3); and means for selecting (Fig. 8, selector 824_k) a receiving frame from the default stream and one of the N restart sub-streams according to a loss status in the default stream (paragraph [057]; lines 1-3).

Independent claim 39 recites: An apparatus comprising: means for transmitting (Figure 1, transmitter 120) a default stream and N restart sub-streams to a plurality of receivers over a plurality of transmission paths (Figure 1, transmission paths/channels 130; paragraph [024], lines 1-6), N being an integer equal to at least 1 and selected according to a selection at the receivers, the default stream being coded by a multiple description (MD) coding (paragraph [027], lines 5-6), the N restart sub-streams being coded by a predictive coding and sampled according to a sampling pattern (paragraph [027], lines 10-11), the default and N restart sub-streams corresponding to a media content, at least one of the N restart sub-streams restarting the media content when there is a restart condition (Figure 4, restart stream 420; paragraph [040], lines 1-3).

2. Dependent claims 2-9, 11, 22, 24-31, 33, 35-38, and 40:

Dependent claims 2, 13, 24, and 35, recite in essence, "a decoder to decode the receiving frame (Figure 3, decoder 330; paragraph [037], lines 1-3)."

Dependent claims 3, 14, 25, and 36, recite in essence, "the selector selects the receiving frame from the one of the N restart sub-streams when the loss status indicates there is a lost frame in the default stream (paragraph [029], lines 9-11; paragraph [064], lines 9-11)."

Dependent claims 4, 15, 26, and 37, recite in essence, "the selector selects the receiving frame from one of the N restart sub-streams, the selected receiving frame being

nearest to the lost frame and belonging to same description as the lost frame (paragraph [064], lines 9-11)."

Dependent claims 5, 16, 27, and 38, recite in essence, "the selector selects the default stream when the loss status indicates there is no lost frame in the default stream (paragraph [045], lines 9-11)."

Dependent claims 6, 17, and 28, recite in essence, "the selector selects the default stream after the receiving frame from the one of the N restart sub-stream is selected (paragraph [064], lines 11-13)."

Dependent claims 7, 18, and 29, recite in essence, "the selection is based on at least one of bandwidth and loss rate of the transmission path (paragraph [055], lines 4-6).

Dependent claims 8, 19, and 30, recite in essence, "the sampling pattern is a non-overlapping pattern or having frames from each description of the MD coding (paragraph [060], lines 3-4)."

Dependent claims 9, 10, 20, 22, 31, 33, and 40, recite in essence, "at least one of the default stream and the N restart sub-streams corresponds to a layered representation of the frames according to an encoding rate (paragraph [066], lines 1-4).

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

1. Claims 23-33 stand rejected because the claimed invention is directed to non-statutory subject matter.

2. Claims 1-8, 10, 12-19, 21, 23-30, 32, and 34-39 stand rejected under 35 U.S.C. §102(b) as being unpatentable over Apostolopoulos.

3. Claims 9, 11, 20, 22, 31, 33, and 40 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Apostolopoulos in view of Caglar.

VII. ARGUMENTS

A. Claims 23-33 Are Not Directed to Non-Statutory Subject Matter.

Claims 23-33 stand rejected under 35 U.S.C. §101. The Examiner contends that "[s]hould the full scope of the claim as properly read in light of the disclosure encompass

non-statutory subject matter such as a "signal", the claim as a whole would be non-statutory." (Final Office Action, page 4, lines 4-6). Applicant respectfully disagrees for the following reasons.

First, the rejected claims 23-33 recite "a machine-accessible <u>storage</u> medium", not just a "machine-accessible medium". A storage medium is clearly statutory. The Examiner has not shown the a "storage medium" is non-statutory.

Second, the disclosure may disclose several embodiments, but the applicant is entitled to claim any embodiment and not all embodiments. Here, applicant elects to claim the storage medium. Therefore, although the disclosure may disclose other embodiments, whether statutory or non-statutory, applicant only claims the "storage medium". The Examiner's discussion on the "signal" as a form of energy is misplaced, because the claims do not recite "signal", or merely "a machine-accessible medium".

Third, the disclosure describes several embodiments in the alternative. For example, paragraph [074] in the specification recites in part,

> "The program or code segments can be stored in a processor **or** machine accessible medium **or** transmitted by a computer data signal embodied in a carrier wave, or a signal modulated by a carrier, over a transmission medium. The "processor readable or accessible medium" or "machine readable or accessible medium" may include any medium that can store, transmit, **or** transfer information." (Specification, paragraph [074], lines 15-19. Emphasis added.)

As seen from the above excerpt, the specification discloses alternative embodiments using the OR conjunctive. The claim language "a machine-accessible storage medium" clearly claims a storage medium, and not just any medium.

The Examiner suggested Applicant to delete in the specification all sections defining the computer readable medium as a "signal" or "carrier wave", etc. (<u>Office Action</u>, page 3, lines 6-8). Applicant respectfully disagrees. A rejection on the basis of the written description should be addressed under 35 U.S.C. §112, and not 35 U.S.C. §101. Furthermore, the Examiner has not shown that persons skilled in the art would not recognize in the disclosure a description of the invention defined by the claim. To satisfy the written description requirement, a patent specification must describe the claimed invention in sufficient detail that one skilled in the art can reasonably conclude that the inventor had possession of the claimed invention. *Moba, B.V. v. Diamond Automation,*

Inc., 325 F.3d 1306, 1319, 66 USPQ2d 1429, 1438 (Fed. Cir. 2003). There is a strong presumption that an adequate written description of the claimed invention is present when the application is filed. *In re Wertheim*, 541 F.2d 257, 263, 191 USPQ 90, 97 (CCPA 1976). The PTO has the initial burden of presenting evidence or reasons why persons skilled in the art would not recognize in the disclosure a description of the invention defined by the claim. Here, the Examiner has not met the burden of showing that persons skilled in the art would not recognize in the disclosure a description of the invention defined by the claim.

B.   <u>Claims 1-8, 10, 12-19, 21, 23-30, 32, and 34-39Are Not Anticipated by Apostolopoulos.</u>

In the Final Office Action, the Examiner rejected claims 1-8, 10, 12,-19, 21, 23-30, 32, and 34-39 under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 7,103,669B2 issued to Apostolopoulos ("<u>Apostolopoulos</u>"). Applicant respectfully traverses the rejection and submits that the Examiner has not met the burden of establishing a prima facie case of anticipation.

<u>Apostolopoulos</u> discloses a video communication method and system employing multiple state encoding and path diversity. A system is composed of two jointly designed subsystems: (1) multiple state video coding system and (2) path diversity transmission system (<u>Apostolopoulos</u>, col. 3, lines 52-54). A multiple state video encoder 114 for generating at least two independently decodable packet streams in response to an original video stream and a path selector 118 for explicitly sending each packet stream over a different path through the network 130 (<u>Apostolopoulos</u>, col. 5, lines 45-49; Fig. 1). The multiple state video encoder 114 receives original video 115 and encodes the video 115 in this example into three independently decodable packet streams 116 by employing multiple state encoding with three states (<u>Apostolopoulos</u>, col. 5, lines 50-52; Fig. 1). The multiple state video encoder may be replaced by a multiple description video coder. Specifically, a multiple description video coder is a coder, which codes the original video into a number of streams, where each stream is independently decodable from the other streams (<u>Apostolopoulos</u>, col. 9, lines 40-44; Fig. 3). A state recovery block 526 selects past and future frames to be used in recovering a lost frame while taking into account scene changes (<u>Apostolopoulos</u>, col. 11, line 66 – col. 12, line 2; Fig. 6).

Apostolopoulous does not disclose, either expressly or inherently, at least one of:

(1) a receiver to receive a default stream and N restart sub-streams from a transmitter over a transmission path, N being an integer equal to at least 1 and selected according to a selection, the default stream being coded by a multiple description (MD) coding, the N restart sub-streams being coded by a predictive coding and sampled according to a sampling pattern, the default and N restart sub-streams corresponding to a media content, at least one of the N restart sub-streams restarting the media content when there is a restart condition; and (2) a selector coupled to the receiver to select a receiving frame from the default stream and one of the N restart sub-streams according to a loss status in the default stream; or

(3) a transmitter to transmit a default stream and N restart sub-streams to a plurality of receivers over a plurality of transmission paths, N being an integer equal to at least 1 and selected according to a selection at the receivers, the default stream being coded by a multiple description (MD) coding, the N restart sub-streams being coded by a predictive coding and sampled according to a sampling pattern, the default and N restart sub-streams corresponding to a media content, at least one of the N restart sub-streams restarting the media content when there is a restart condition.

First, Apostolopoulos merely discloses a coder or encoder (Apostolopoulos, col. 5, lines 45-52; Fig. 1; col. 9, lines 40-44; Fig. 3), NOT a receiver to receive a default stream and N restart sub-streams, the default stream being coded by a multiple description (MD) coding, the N restart sub-streams being coded by a predictive coding and sampled according to a sampling pattern. A coder or encoder is used at the transmitter or sender, not at the receiver.

Second, Apostolopoulos merely discloses the multiple state video encoder 114 including a frame separate block 312 that separates the original video frames 115 into, for example, a series of odd video frames 350 and a series of even video frames 352 (Apostolopoulos, col. 7, lines 40-44; Fig. 3). It does not provide a default stream and N restart sub-streams. The odd video frames 350 and the even video frames 352 represent a part of the video frames. They are not default stream and N restart sub-streams.

Third, separating video frames into odd and even frames is not the same as multiple description (MD) coding. In MD coding, each stream has a different prediction loop and the different bit streams are transmitted over different transmission paths

Fourth, <u>Apostolopoulos</u> merely discloses encoding the video 115 into at least two independently decodable packet streams (<u>Apostolopoulos</u>, col. 5, lines 45-47), not a default stream and N restart sub-streams. The at least two independently decodable packet streams merely correspond to the video 115. They do not provide restart of the content stream when there is a restart condition.

Fifth, <u>Apostolopoulos</u> merely discloses when an error has been detected, state recovery is performed by employing previous or future frames of correctly decoded frames (<u>Apostolopoulos</u>, col. 7, lines 19-21; Fig. 9), NOT a selector to select a receiving frame from the default stream and one of the N restart sub-streams according to a loss status in the default stream. Using previous or future frames of correctly decoded frames is not the same as selecting a receiving frame from the default stream and one of the N re-start sub-streams. In addition, detecting an error merely determines if there is an error in the decoded frame (<u>Apostolopoulos</u>, col. 7, lines 13-14; Fig. 9). It is not equivalent to a loss status in the default stream.

In the Final Office Action, the Examiner cites col. 7, lines 9-37 to support the argument that discloses a selector to select a receiving frame from the default stream and one of the N start sub-streams according to a loss status in the default stream (<u>Final Office Action</u>, page 5, paragraph 10). However, the cited excerpt does not provide the necessary support. For ease of reference, the cited excerpt is copied below.

> "FIG. 9 a flowchart illustrating the steps performed by multiple state decoder in accordance with one embodiment of the present invention. In step 910, a determination is made whether the received frame is from a first sub-sequence. If so, the packet is decoded in step 914. In step 918, a determination is made whether an error has been detected. If there is no error, the frame is reconstructed (step 920) and merged with other frames (step 930). For example, the decoded odd frames can be merged with the decoded even frames.
>
> **When an error has been detected, state recovery is performed by employing previous or future frames of correctly decoded frames** (step 950). In step 960, the lost frame is estimated. Processing then proceeds to step 930. Optionally, when an error has been detected, steps 940 and 944 may be processed before the state recovery 950. In step 940, a determination is made whether a reduced frame rate is acceptable (e.g., recovering the video stream at one-half the frame rate). If so, in step 944, the video is displayed at the

> reduced frame rate by using frames from on of the other sub-
> sequences (e.g., the second sub-sequence). Steps 914 to 960
> may be replicated for the processing of each sub-sequence of
> frames. For example, a packet from the second sub-sequence
> has a similar processing flow except that in step 944, the
> reduced frame rate is generated by using the frames from the
> first subsequence or another sub-sequence that is received
> without error, and in step 930, the second subsequence of
> frames is merged with other subsequences (e.g., frames in
> the first sub-sequence)." (<u>Apostolopoulos</u>, col. 7, lines 9-37.
> Emphasis added.)

As seen from the above excerpt, <u>Apostolopoulos</u> merely discloses when an error has been detected, state recovery is performed by employing previous or future frames of correctly decoded frames (<u>Apostolopoulos</u>, col. 7, lines 19-21). None of these is related to selecting a receiving frame from the default stream and one of the N start sub-streams according to a loss status in the default stream. Furthermore, reducing the frame rate has nothing to do with selecting a frame.

To anticipate a claim, the reference must teach every element of the claim. "A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Vergegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ 2d 1051, 1053 (Fed. Cir. 1987). "The identical invention must be shown in as complete detail as is contained in the...claim." *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ 2d 1913, 1920 (Fed. Cir. 1989). Since the Examiner failed to show that <u>Apostolopoulos</u> teaches or discloses any one of the above elements, the rejection under 35 U.S.C. §102 is improper.

The Examiner bears the burden of presenting at least a prima facie case of anticipation. *In re King*, 801 F.2d 1324, 1327, 231 USPQ 136, 138-139 (Fed. Cir. 1986); *In re Wilder*, 429 F.2d 447, 450, 166 USPQ 545, 548 (CCPA 1970). Only if that burden is met, does the burden of going forward shift to the applicant. *In re King*, 801 F.2d at 1327, 231 USPQ at 138-139; *In re Wilder*, 429 F.2d at 450, 166 USPQ at 548. Once a prima facie case is established and rebuttal evidence is submitted, the ultimate question becomes whether, based on the totality of the record, the Examiner carried his burden of proof by a preponderance. See *In re Oetiker*, 977 F.2d 1443, 1445. 24 USPQ2d 1443, 1444 (Fed. Cir. 1992). If the Examiner fails to establish a prima facie case, the rejection is improper and

will be overturned. *In re Fine*, 837 F.2d 1071, 1074, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988).

Therefore, Applicant believes that independent claims 1, 10, 12, 21, 23, 32, 34, and 39 and their respective dependent claims are distinguishable over the cited prior art references. Accordingly, Applicant respectfully requests the rejection under 35 U.S.C. §102(a) be withdrawn.

C.   Claims 9, 11, 20, 22, 31, 33, and 40 Are Not Obvious over Apostolopoulos in view of Caglar.

In the Office Action, the Examiner rejected claims 9, 11, 20, 22, 31, 33, and 40 under 35 U.S.C. §103(a) as being unpatentable over Apostolopoulos in view of U.S. Publication No. 2006/0146934 issued to Caglar et al. ("Caglar"). Applicant respectfully traverses the rejection and submits that the Examiner has not met the burden of establishing a prima facie case of obviousness.

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. *MPEP §2143, p. 2100-126 to 2100-130 (8th Ed., Rev. 5, August 2006).* Applicant respectfully submits that there is no suggestion or motivation to combine their teachings, and thus no *prima facie* case of obviousness has been established.

Furthermore, the Supreme Court in *Graham v. John Deere*, 383 U.S. 1, 148 USPQ 459 (1966), stated: "Under § 103, the scope and content of the prior art are to be determined; differences between the prior art and the claims at issue are to be ascertained; and the level of ordinary skill in the pertinent art resolved. Against this background, the obviousness or nonobviousness of the subject matter is determined." MPEP 2141. In *KSR International Co. vs. Teleflex, Inc.*, 127 S.Ct. 1727 (2007) (Kennedy, J.), the Court explained that "[o]ften, it will be necessary for a court to look to interrelated teachings of multiple patents; the effects of demands known to the design community or present in the marketplace; and the background knowledge possessed by a person having ordinary skill

in the art, all in order <u>to determine whether there was an apparent reason to combine the</u> <u>known elements in the fashion claimed by the patent at issue.</u>" The Court further required that an explicit analysis for this reason must be made. "[R]ejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness." *KSR 127 S.Ct.* at 1741, quoting *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006). In the instant case, Applicant respectfully submits that there are significant differences between the cited references and the claimed invention and there is no apparent reason to combine the known elements in the manner as claimed, and thus no *prima facie* case of obviousness has been established.

Apostolopoulos discloses a video communication method and system employing multiple state encoding and path diversity as discussed above.

Caglar discloses video coding. A finer quantizer is used to encode a different picture in an enhancement layer (Caglar, paragraph [0035], lines 5-6). There can be multiple enhancement layers, each increasing picture resolution over that of the previous layer (Caglar, paragraph [0036], lines 18-20).

Apostolopoulos and Caglar, taken alone or in any combination, do not disclose or render obvious, at least one of:

(1) a receiver to receive a default stream and N restart sub-streams from a transmitter over a transmission path, N being an integer equal to at least 1 and selected according to a selection, the default stream being coded by a multiple description (MD) coding, the N restart sub-streams being coded by a predictive coding and sampled according to a sampling pattern, the default and N restart sub-streams corresponding to a media content, at least one of the N restart sub-streams restarting the media content when there is a restart condition; and (2) a selector coupled to the receiver to select a receiving frame from the default stream and one of the N restart sub-streams according to a loss status in the default stream; or

(3) a transmitter to transmit a default stream and N restart sub-streams to a plurality of receivers over a plurality of transmission paths, N being an integer equal to at least 1 and selected according to a selection at the receivers, the default stream being coded by a multiple description (MD) coding, the N restart sub-streams being coded by a predictive coding and sampled according to a sampling pattern, the default and N restart sub-streams

corresponding to a media content, at least one of the N restart sub-streams restarting the media content when there is a restart condition; and

(4) at least one of the default stream and the N restart sub-streams corresponds to a layered representation of the frames according to an encoding rate, as recited in claims 9, 11, 20, 22, 31, 33, and 40.

As discussed above, Apostolopoulos does not disclose or render obvious elements (1) – (3) as above. Accordingly, a combination of Apostolopoulos with any other references in rejecting claims 9, 11, 20, 22, 31, 33, and 40, which depend on claims 1, 10, 12, 21, 23, 32, and 39, respectively, is improper.

Furthermore, Caglar merely discloses multiple enhancement layers, each increasing picture resolution over that of the previous layer (Caglar, paragraph [0036], lines 18-20), not a layered representation of the frames according to an encoding rate. The multiple enhancement layers merely have increasing resolutions. They are not layered representation according to an encoding rate.

For ease of reference, the cited excerpt is copied below.

"Spatial scalability allows for the creation of multi-resolution bit-streams to meet varying display requirements/constraints. A spatially scalable structure is shown in FIG. 5. It is similar to that used in SNR scalability. In spatial scalability, **a spatial enhancement layer is used to recover the coding loss between an up-sampled version of the reconstructed layer used as a reference by the enhancement layer**, that is the reference layer, and a higher resolution version of the original picture. For example, if the reference layer has a Quarter Common Intermediate Format (QCIF) resolution, 176.times.144 pixels, and the enhancement layer has a Common Intermediate Format (CIF) resolution, 352.times.288 pixels, the reference layer picture must be scaled accordingly such that the enhancement layer picture can be appropriately predicted from it. According to H.263 the resolution is increased by a factor of two in the vertical direction only, horizontal direction only, or both the vertical and horizontal directions for a single enhancement layer. There can be multiple enhancement layers, each increasing picture resolution over that of the previous layer. Interpolation filters used to up-sample the reference layer picture are explicitly defined in H.263. Apart from the up-sampling process from the reference to the enhancement layer, the processing and syntax of a spatially scaled picture are identical to those of an SNR scaled picture. Spatial

scalability provides increased spatial resolution over SNR
scalability." (<u>Caglar</u>, paragraph [0036]. Emphasis added.)

As seen from the above excerpt, <u>Caglar</u> merely discloses a spatial enhancement
layer is used to recover the coding loss between an up-sampled version of the
reconstructed layer used as a reference by the enhancement layer (<u>Caglar</u>, paragraph
[0036], lines 5-8). They are not layers correspond to an encoding rate.

The Examiner failed to establish a prima facie case of obviousness and failed to
show there is teaching, suggestion, or motivation to combine the references. When
applying 35 U.S.C. 103, the following tenets of patent law must be adhered to: (A) The
claimed invention must be considered as a whole; (B) The references must be considered
as a whole and must suggest the desirability and thus the obviousness of making the
combination; (C) The references must be viewed without the benefit of impermissible
hindsight vision afforded by the claimed invention; and (D) Reasonable expectation of
success is the standard with which obviousness is determined. *Hodosh v. Block Drug Col,
Inc.*, 786 F.2d 1136, 1143 n.5, 229 USPQ 182, 187 n.5 (Fed. Cir. 1986). "When
determining the patentability of a claimed invention which combined two known elements,
'the question is whether there is something in the prior art as a whole suggest the
desirability, and thus the obviousness, of making the combination.'" *In re Beattie*, 974
F.2d 1309, 1312 (Fed. Cir. 1992), 24 USPQ2d 1040; *Lindemann Maschinenfabrik GmbH
v. American Hoist & Derrick Co.*, 730 F.2d 1452, 1462, 221 USPQ (BNA) 481, 488 (Fed.
Cir. 1984). To defeat patentability based on obviousness, the suggestion to make the new
product having the claimed characteristics must come from the prior art, not from the
hindsight knowledge of the invention. *Interconnect Planning Corp. v. Feil*, 744 F.2d 1132,
1143, 227 USPQ (BNA) 543, 551 (Fed. Cir. 1985). To prevent the use of hindsight based
on the invention to defeat patentability of the invention, this court requires the Examiner to
show a motivation to combine the references that create the case of obviousness. In other
words, the Examiner must show reasons that a skilled artisan, confronted with the same
problems as the inventor and with no knowledge of the claimed invention, would select the
prior elements from the cited prior references for combination in the manner claimed. *In
re Rouffet*, 149 F.3d 1350 (Fed. Cir. 1996), 47 USPQ 2d (BNA) 1453. "To support the
conclusion that the claimed invention is directed to obvious subject matter, either the
references must expressly or implicitly suggest the claimed invention or the Examiner

must present a convincing line of reasoning as to why the artisan would have found the claimed invention to have been obvious in light of the teachings of the references." *Ex parte Clapp*, 227 USPQ 972, 973. (Bd.Pat.App.&Inter. 1985). The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. *In re Mills*, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990). Furthermore, although a prior art device "may be capable of being modified to run the way the apparatus is claimed, there must be a suggestion or motivation in the reference to do so." *In re Mills*, 916 F.2d at 682, 16 USPQ2d at 1432; *In re Fritch*, 972 F.2d 1260 (Fed. Cir. 1992), 23 USPQ2d 1780.

Moreover, the Examiner failed to establish the factual inquires in the three-pronged test as required by the *Graham* factual inquires. There are significant differences between the cited references and the claimed invention as discussed above. Furthermore, the Examiner has not made an explicit analysis on the apparent reason to combine the known elements in the fashion in the claimed invention. Accordingly, there is no apparent reason to combine the teachings of <u>Apostolopoulos</u> and <u>Caglar</u>.

In the present invention, the cited references do not expressly or implicitly disclose any of the above elements. In addition, the Examiner failed to present a convincing line of reasoning as to why a combination of <u>Apostolopoulos</u> and <u>Caglar</u> is an obvious application of error recovery for multicast of multiple description coded video using restart, or an explicit analysis on the apparent reason to combine <u>Apostolopoulos</u> and <u>Caglar</u> in the manner as claimed.

Therefore, Applicant believes that independent claims 1, 10, 12, 21, 23, 32, 34, and 39 and their respective dependent claims are distinguishable over the cited prior art references.

VIII. <u>CONCLUSION</u>

Applicant respectfully requests that the Board enter a decision overturning the Examiner's rejection of all pending claims, and holding that the claims satisfy the requirements of 35 U.S.C. §101, 35 U.S.C. §102(e) and 35 U.S.C. §103(a).

Respectfully submitted,

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IX.   CLAIM APPENDIX

The claims of the present application which are involved in this appeal are as follows:

1.   (previously presented) An apparatus comprising:

a receiver to receive a default stream and N restart sub-streams from a transmitter over a transmission path, N being an integer equal to at least 1 and selected according to a selection, the default stream being coded by a multiple description (MD) coding, the N restart sub-streams being coded by a predictive coding and sampled according to a sampling pattern, the default and N restart sub-streams corresponding to a media content, at least one of the N restart sub-streams restarting the media content when there is a restart condition; and

a selector coupled to the receiver to select a receiving frame from the default stream and one of the N restart sub-streams according to a loss status in the default stream.

2.   (original) The apparatus of claim 1 further comprising:

a decoder to decode the receiving frame.

3.   (original) The apparatus of claim 1 wherein the selector selects the receiving frame from the one of the N restart sub-streams when the loss status indicates there is a lost frame in the default stream.

4.   (original) The apparatus of claim 3 wherein the selector selects the receiving frame from one of the N restart sub-streams, the selected receiving frame being nearest to the lost frame and belonging to same description as the lost frame.

5.   (original) The apparatus of claim 4 wherein the selector selects the default stream when the loss status indicates there is no lost frame in the default stream.

6.   (original) The apparatus of claim 4 wherein the selector selects the default stream after the receiving frame from the one of the N restart sub-stream is selected.

7. (original) The apparatus of claim 1 wherein the selection is based on at least one of bandwidth and loss rate of the transmission path.

8. (original) The apparatus of claim 1 wherein the sampling pattern is a non-overlapping pattern or having frames from each description of the MD coding.

9. (original) The apparatus of claim 1 wherein at least one of the default stream and the N restart sub-streams corresponds to a layered representation of the frames according to an encoding rate.

10. (previously presented) An apparatus comprising:

a transmitter to transmit a default stream and N restart sub-streams to a plurality of receivers over a plurality of transmission paths, N being an integer equal to at least 1 and selected according to a selection at the receivers, the default stream being coded by a multiple description (MD) coding, the N restart sub-streams being coded by a predictive coding and sampled according to a sampling pattern, the default and N restart sub-streams corresponding to a media content, at least one of the N restart sub-streams restarting the media content when there is a restart condition.

11. (original) The apparatus of claim 10 wherein at least one of the default stream and the N restart sub-streams corresponds to a layered representation of the frames according to an encoding rate.

12. (previously presented) A method comprising:

receiving a default stream and N restart sub-streams from a transmitter over a transmission path, N being an integer equal to at least 1 and selected according to a selection, the default stream being coded by a multiple description (MD) coding, the N restart sub-streams being coded by a predictive coding and sampled according to a sampling pattern, the default and N restart sub-streams corresponding to a media content, at least one of the N restart sub-streams restarting the media content when there is a restart condition; and

selecting a receiving frame from the default stream and one of the N restart sub-streams according to a loss status in the default stream.

13.   (original) The method of claim 12 further comprising:

decoding the receiving frame.

14.   (original) The method of claim 12 wherein selecting comprises selecting the one of the N restart sub-streams when the loss status indicates there is a lost frame in the default stream.

15.   (original) The method of claim 14 wherein selecting comprises selecting the receiving frame from one of the N restart sub-streams, the selected receiving frame being the nearest to the lost frame and belonging to same description of the lost frame.

16.   (original) The method of claim 15 wherein selecting comprises selecting the default stream when the loss status indicates there is no lost frame in the default stream.

17.   (original) The method of claim 15 wherein selecting comprises selecting the default stream after the receiving frame from the one of the N restart sub-streams is selected.

18.   (original) The method of claim 12 wherein the selection is based on at least one of bandwidth and loss rate of the transmission path.

19.   (original) The method of claim 12 wherein the sampling pattern is a non-overlapping pattern or having frames from each description of the MD coding.

20.   (original) The method of claim 12 wherein at least one of the default stream and the N restart sub-streams corresponds to a layered representation of the frames.

21.   (previously presented) A method comprising:

transmitting a default stream and N restart sub-streams to a plurality of receivers over a plurality of transmission paths, N being an integer equal to at least 1 and selected according to a selection at the receivers, the default stream being coded by a multiple description (MD) coding, the N restart sub-streams being coded by a predictive coding and sampled according to a sampling pattern, the default and N restart sub-streams

corresponding to a media content, at least one of the N restart sub-streams restarting the media content when there is a restart condition.

22.   (original) The method of claim 21 wherein at least one of the default stream and the N restart sub-streams corresponds to a layered representation of the frames according to an encoding rate.

23.   (previously presented) An article of manufacture comprising:

a machine-accessible storage medium including data that, when accessed by a machine, causes the machine to perform operations comprising:

receiving a default stream and N restart sub-streams from a transmitter over a transmission path, N being an integer equal to at least 1 and selected according to a selection, the default stream being coded by a multiple description (MD) coding, the N restart sub-streams being coded by a predictive coding and sampled according to a sampling pattern, the default and N restart sub-streams corresponding to a media content, at least one of the N restart sub-streams restarting the media content when there is a restart condition; and

selecting a receiving frame from the default stream and one of the N restart sub-streams according to a loss status in the default stream.

24.   (original) The article of manufacture of claim 23 further comprising data that cause the machine to perform operations comprising:

decoding the receiving frame.

25.   (previously presented) The article of manufacture of claim 23 wherein the data causing the machine to perform selecting comprise data that cause the machine to perform operations comprising selecting the receiving frame from the one of the N restart sub-streams when the loss status indicates there is a lost frame in the default stream.

26.   (previously presented) The article of manufacture of claim 25 wherein the data causing the machine to perform selecting comprise data that cause the machine to perform operations comprising selecting the receiving frame, the selected receiving frame being nearest to the lost frame and belonging to same description as the lost frame.

27.   (previously presented) The article of manufacture of claim 26 wherein the data causing the machine to perform selecting comprise data that cause the machine to perform operations comprising selecting the default stream when the loss status indicates there is no lost frame in the default stream.

28.   (previously presented) The article of manufacture of claim 26 wherein the data causing the machine to perform selecting comprise data that cause the machine to perform operations comprising selecting the default stream after the receiving frame from the one of the N restart frames is selected.

29.   (original) The article of manufacture of claim 23 wherein the selection is based on at least one of bandwidth and loss rate of the transmission path.

30.   (original) The article of manufacture of claim 23 wherein the sampling pattern is a non-overlapping pattern or having frames from each description of the MD coding.

31.   (original) The article of manufacture of claim 23 wherein at least one of the default stream and the N restart sub-streams corresponds to a layered representation of the frames.

32.   (previously presented) An article of manufacture comprising:

a machine-accessible storage medium including data that, when accessed by a machine, causes the machine to perform operations comprising:

transmitting a default stream and N restart sub-streams to a plurality of receivers over a plurality of transmission paths, N being an integer equal to at least 1 and selected according to a selection at the receivers, the default stream being coded by a multiple description (MD) coding, the N restart sub-streams being coded by a predictive coding and sampled according to a sampling pattern, the default and N restart sub-streams corresponding to a media content, at least one of the N restart sub-streams restarting the media content when there is a restart condition.

33.   (previously presented) The article of manufacture of claim 32 wherein at least one of the default stream and the N restart sub-streams corresponds to a layered representation of the frames according to an encoding rate.

34.   (previously presented) An apparatus comprising:

means for receiving a default stream and N restart sub-streams from a transmitter over a transmission path, N being an integer equal to at least 1 and selected according to a selection, the default stream being coded by a multiple description (MD) coding, the N restart sub-streams being coded by a predictive coding and sampled according to a sampling pattern, the default and N restart sub-streams corresponding to a media content, at least one of the N restart sub-streams restarting the media content when there is a restart condition; and

means for selecting a receiving frame from the default stream and one of the N restart sub-streams according to a loss status in the default stream.

35.   (original) The apparatus of claim 34 further comprising:
means for decoding the receiving frame.

36.   (original) The apparatus of claim 34 wherein the means for selecting selects the receiving frame from the one of the N restart sub-streams when the loss status indicates there is a lost frame in the default stream.

37.   (original) The apparatus of claim 36 wherein the means for selecting selects the receiving frame, the selected receiving frame being nearest to the lost frame and belonging to same description as the lost frame.

38.   (original) The apparatus of claim 37 wherein the means for selecting selects the default stream when the loss status indicates there is no lost frame in the default stream.

39.   (previously presented) An apparatus comprising:

means for transmitting a default stream and N restart sub-streams to a plurality of receivers over a plurality of transmission paths, N being an integer equal to at least 1 and selected according to a selection at the receivers, the default stream being coded by a

multiple description (MD) coding, the N restart sub-streams being coded by a predictive coding and sampled according to a sampling pattern, the default and N restart sub-streams corresponding to a media content, at least one of the N restart sub-streams restarting the media content when there is a restart condition.

40.   (original) The apparatus of claim 39 wherein at least one of the default stream and the N restart sub-streams corresponds to a layered representation of the frames according to an encoding rate.

XI.   <u>EVIDENCE APPENDIX</u>

None

XII.   <u>RELATED PROCEEDINGS APPENDIX</u>

None